

REMARKS

Amendments

Claims 1-11 and 13-15 are currently pending in the application upon entry of the foregoing amendments. Claims 1 and 15 are amended to clarify that the process operates without the addition of steam or water beyond what is normally generated during combustion processes. Reconsideration of the present application, as amended, and allowance of the pending claims is respectfully requested in view of the following remarks.

Rejection Under 35 U.S.C. § 112

Claims 1 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite with respect to the terms “essentially without the addition of steam or water.” Applicants have amended the claims to clarify that the process operates without the addition of steam or water beyond what is normally generated during combustion processes, rendering the rejection moot.

Rejection Under 35 U.S.C. § 103

The Examiner rejected claims 1-3, 6, 8, 9, 13, 14, and 15 under 35 U.S.C. § 103(a) as being obvious over Isogaya in view of U.S. Patent 4,854,943 to Voeste (hereinafter “Voeste”). The Examiner also rejected claims 4, 5, 7, and 10-11 under 35 U.S.C. §103(a) as being obvious over Isogaya in view Voeste and further in view of U.S. Patent 5,010,051 to Rudy (hereinafter “Rudy”). Applicants respectfully traverse the rejections.

The cited prior art fails to establish a *prima facie* case of obviousness of the claims as amended because there is no motivation to combine the cited references. Although Isogaya, Voeste, and Rudy each address processes for the catalytic conversion of hydrocarbons, the references teach away from their combination. For instance, Isogaya discloses that the “steam ratio [steam (mole)/carbon (mole)] is *above* 0.3, particularly 0.3-7. If the steam ratio is *lower*,

carbon is deposited on the catalyst bed and, on the other hand, a higher steam ratio is uneconomical.” (emphasis added) (Col. 4, Lines 58-59). Thus, Isogaya teaches that a steam/carbon ratio *higher* than 7 and *lower* than 0.3 are undesirable. Although both Isogaya and Voeste teach the desirability of obtaining a high concentration of carbon monoxide, modifying Isogaya by not adding steam would be inconsistent with the teachings of Isogaya. Furthermore, as the Examiner noted, Voeste teaches that the steam/carbon ratio is *lower* than 0.2. Thus, Isogaya and Voeste directly contradict each other and a skilled artisan would not be motivated to combine the references.

Those skilled in the art also would be unlikely to combine Isogaya, Voeste, and Rudy. The Examiner relies on Rudy to teach use of a noble metal catalyst, such as rhodium. However, the processes of Isogaya and Rudy are incompatible and thus a skilled artisan would not be motivated to combine the references. Specifically, Rudy teaches that rhodium catalysts disposed on activated alumina support have decreased conversion rates at operating temperatures higher than 400°C (Col. 6, Lines 9-17), while Isogaya teaches that the catalyst bed temperature must be maintained at a temperature of at least 800°C in order to avoid carbon deposition and instability (Col. 4, Lines 46-56). Based on the teachings of these references, one of ordinary skill in the art would expect there to be undesirably low conversion rates if the rhodium catalyst were used in the process and at operating temperatures taught by Isogaya. Thus, one skilled in the art would not be motivated to combine the references of Isogaya and Rudy.

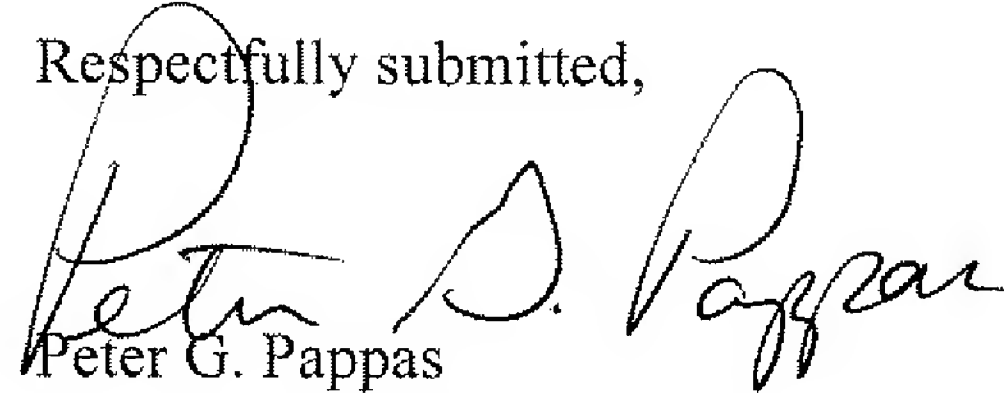
In sum, the combination of the cited references fails to establish a *prima facie* case of obviousness. Accordingly, the rejections must be withdrawn.

Conclusions

For the foregoing reasons, Applicants submit that claims 1-11 and 13-15 are patentable over the cited prior art. Allowance of the pending claims is therefore earnestly solicited.

If there are any issues which can be resolved by a telephone conference or an examiner's amendment, the Examiner is invited to telephone the attorney at (404) 853-8064.

Respectfully submitted,


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